

WHAT IS CLAIMED IS:

1 1. A method of maintaining consistency between
2 header compression contexts respectively associated with
3 a packet transmitting station and a packet receiving
4 station during a packet flow from the packet transmitting
5 station to the packet receiving station, comprising:

6 determining whether a predetermined amount of
7 time has elapsed without receiving at the packet
8 receiving station a packet in the packet flow; and

9 sending a context update request from the
10 packet receiving station to the packet transmitting
11 station if the predetermined amount of time has elapsed
12 without receiving a packet at the packet receiving
13 station.

1 2. The method of Claim 1, wherein said
2 predetermined amount of time is a time interval expected
3 between consecutive packets in the packet flow.

1 3. The method of Claim 1, wherein said sending
2 step includes explicitly identifying the context update

3 request as having been sent in response to expiration of
4 the predetermined amount of time.

1 4. The method of Claim 1, further comprising
2 receiving the context update request at the packet
3 transmitting station, determining whether the context
4 update request is unnecessary for context consistency,
5 and ignoring the context update request if it is
6 unnecessary for context consistency.

1 5. The method of Claim 4, wherein said step of
2 determining whether the context update request is
3 unnecessary for context consistency includes recognizing
4 that the context update request has been sent in response
5 to expiration of said predetermined amount of time,
6 determining whether said predetermined amount of time has
7 elapsed between successive packet transmissions in the
8 packet flow, and deciding that the context update request
9 is unnecessary for context consistency if it is
10 determined that said predetermined amount of time has
11 elapsed between successive packet transmissions in the
12 packet flow.

1 6. The method of Claim 4, wherein said step of
2 determining whether the context update request is
3 unnecessary for context consistency includes determining
4 whether a round-trip-time associated with a packet
5 communication channel through which the packet
6 transmitting station and the packet receiving station
7 communicate with one another has elapsed between
8 successive packet transmissions in the packet flow, and
9 deciding that the context update request is not necessary
10 if the round-trip-time has elapsed between successive
packet transmissions in the packet flow.

1 7. A method of maintaining consistency between
2 header compression contexts respectively associated with
3 a packet transmitting station and a packet receiving
4 station during a packet flow from the packet transmitting
5 station to the packet receiving station, comprising:

6 sending from the packet receiving station to
7 the packet transmitting station a context update request
8 in response to which a context update is expected; and

9 if a predetermined amount of time since the
10 context update request was sent elapses without receiving

11 the expected context update at the packet receiving
12 station, sending the context update request from the
13 packet receiving station to the packet transmitting
14 station a second time.

1 8. The method of Claim 7, wherein the
2 predetermined amount of time is a function of an
3 estimated round-trip-time associated with a packet
4 communication channel through which the packet
5 transmitting station and the packet receiving station
6 communicate with one another.

1 9. The method of Claim 7, further comprising
2 sending the context update request from the packet
3 receiving station to the packet transmitting station a
4 third time if, since sending the context update request
5 the second time, the predetermined amount of time elapses
6 without receiving the expected context update at the
7 packet receiving station.

1 10. The method of Claim 7, further comprising
2 receiving a context update request at the packet

3 transmitting station, determining at the packet
4 transmitting station whether a context update
5 corresponding to the received context update request has
6 already been sent from the packet transmitting station to
7 the packet receiving station, and ignoring the received
8 context update request if a corresponding context update
9 has already been sent from the packet transmitting
10 station to the packet receiving station.

11. A method of transmitting from a first packet
communication station to a second packet communication
station information including context control
information, the context control information used to
maintain consistency between header compression contexts
respectively associated with the first and second packet
communication stations, comprising:

transmitting information other than context
control information between the first and second packet
communication stations according to a first transmission
parameter;

12 determining that context control information is
13 to be transmitted from the first packet communication
14 station to the second packet communication station;

15 in response to the determination that context
16 control information is to be transmitted from the first
17 packet communication station to the second packet
18 communication station, providing a second transmission
19 parameter according to which the context control
20 information can be transmitted from the first packet
21 communication station to the second packet communication
22 station with a probability of delivery that exceeds a
23 probability of delivery associated with said step of
24 transmitting information other than context control
25 information according to the first transmission
26 parameter; and

27 transmitting the context control information
28 from the first packet communication station to the second
29 packet communication station according to the second
30 transmission parameter.

1 12. The method of Claim 11, wherein said second
2 transmission parameter specifies that the context control

3 information is to be transmitted from the first packet
4 communication station to the second packet communication
5 station in a plurality of consecutively transmitted
6 packets.

1 13. The method of Claim 12, wherein each of the
2 consecutively transmitted packets includes all of the
3 context control information.

4 14. The method of Claim 13, wherein the context
5 control information includes a context update request,
6 further comprising receiving the context update request
7 at the second packet communication station, determining
8 whether a context update corresponding to the received
9 context update request has already been sent from the
10 second packet communication station to the first packet
11 communication station, and ignoring the received context
update request if a corresponding context update has
already been sent from the second packet communication
station to the first packet communication station.

1 15. The method of Claim 11, wherein the context
2 control information includes one of a context update and
3 a context update request.

1 16. The method of Claim 11, wherein the second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication
5 station in each of a plurality of packets respectively
6 transmitted periodically in accordance with a
7 predetermined frequency.

1 17. The method of Claim 16, wherein the context
2 control information includes a context update request,
3 further comprising receiving a context update request at
4 the second packet communication station, determining
5 whether a context update corresponding to the received
6 context update request has already been sent from the
7 second packet communication station to the first packet
8 communication station, and ignoring the received context
9 update request if a corresponding context update has

10 already been sent from the second packet communication
11 station to the first packet communication station.

1 18. The method of Claim 16, wherein each of the
2 periodically transmitted packets includes all of the
3 context control information.

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1 19. The method of Claim 11, wherein the second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication
5 station at a higher power level than a power level
6 specified by the first transmission parameter.

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1 20. The method of Claim 11, wherein the second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication
5 station using a lower channel coding rate than a channel
6 coding rate specified by the first transmission
7 parameter.

1 21. A method of processing header compression
2 context update requests received at a header compression
3 side of a packet communication link, comprising:

4 receiving a header compression context update
5 request at the header compression side of the packet
6 communication link;

7 determining whether the context update request
8 is unnecessary for context consistency between the header
9 compression side of the packet communication link and a
10 header decompression side of the packet communication
11 link; and

12 ignoring the received context update request if
13 it is determined to be unnecessary for context
14 consistency between the header compression side and the
15 header decompression side of the packet communication
16 link.

1 22. The method of Claim 21, wherein said
2 determining step includes recognizing that the context
3 update request was sent from the header decompression
4 side in response to expiration of a predetermined amount
5 of time between arrival at the header decompression side

6 of consecutive packets of a packet flow from the header
7 compression side to the header decompression side.

1 23. The method of Claim 22, wherein said
2 determining step includes determining whether said
3 predetermined amount of time has elapsed between
4 successive packet transmissions in the packet flow, and
5 deciding that the context update request is unnecessary
6 for context consistency if said predetermined amount of
7 time has elapsed between successive packet transmissions
8 in the packet flow.

1 24. The method of Claim 21, wherein said
2 determining step includes determining whether a round-
3 trip-time associated with the packet communication link
4 has expired between successive packet transmissions in
5 the packet flow, and deciding that the context update
6 request is unnecessary for context consistency if the
7 round-trip-time has expired between successive packet
8 transmissions in the packet flow.

1 25. An apparatus for maintaining consistency
2 between header compression contexts respectively
3 associated with a packet transmitting station and a
4 packet receiving station during a packet flow from the
5 packet transmitting station to the packet receiving
6 station, comprising:

7 a timer for determining whether a predetermined
8 amount of time has elapsed without receiving at the
9 packet receiving station a packet in the packet flow; and

10 a context update request generator coupled to
11 said timer for sending a context update request from the
12 packet receiving station to the packet transmitting
13 station if the predetermined amount of time has elapsed
14 without receiving a packet at the packet receiving
15 station.

1 26. The apparatus of Claim 25, wherein said
2 predetermined amount of time is a time interval expected
3 between consecutive packets in the packet flow.

1 27. The apparatus of Claim 25, wherein said context
2 update request generator is operable to explicitly

3 identify a context update request that has been sent in
4 response to expiration of said predetermined amount of
5 time.

1 28. The apparatus of Claim 25, wherein said timer
2 and said context update request generator are provided in
3 the packet receiving station.

1 29. The apparatus of Claim 28, wherein the packet
2 receiving station is a radio communication station
3 operable in a telecommunications network.

1 30. An apparatus for maintaining consistency
2 between header compression contexts respectively
3 associated with a packet transmitting station and a
4 packet receiving station during a packet flow from the
5 packet transmitting station to the packet receiving
6 station, comprising:

7 a context update request generator for sending
8 from the packet receiving station to the packet
9 transmitting station a context update request in response
10 to which a context update is expected;

11 a timer coupled to said context update request
12 generator for determining whether, since a context update
13 request was sent, a predetermined amount of time has
14 elapsed without receiving the expected context update at
15 the packet receiving station; and

16 said context update request generator operable
17 for sending the context update request from the packet
18 receiving station to the packet transmitting station a
19 second time if the predetermined amount of time has
20 elapsed without receiving the expected context update at
21 the packet receiving station.

31. The apparatus of Claim 30, wherein the
predetermined amount of time is a function of an
estimated round-trip-time associated with a packet
communication channel through which the packet
transmitting station and the packet receiving station
communicate with one another.

32. The apparatus of Claim 30, wherein said timer
and said context update request generator are provided in
the packet receiving station.

1 33. The apparatus of Claim 32, wherein the packet
2 receiving station is a radio communication station
3 operable in a telecommunications network.

1 34. An apparatus for transmitting from a first
2 packet communication station to a second packet
3 communication station information including context
4 control information, the context control information used
5 to maintain consistency between header compression
6 contexts respectively associated with the first and
7 second packet communication stations, comprising:

8 an output for transmitting information other
9 than context control information between the first and
10 second packet communication stations according to a first
11 transmission parameter;

12 a context control information generator coupled
13 to said output for generating context control information
14 to be transmitted from the first packet communication
15 station to the second packet communication station;

16 a transmission parameter generator having an
17 input for receiving an indication that context control
18 information generated by said context control information

19 generator is to be transmitted from the first packet
20 communication station to the second packet communication
21 station, said transmission parameter generator operable
22 in response to said indication for providing a second
23 transmission parameter according to which the context
24 control information can be transmitted from the first
25 packet communication station to the second packet
26 communication station with a probability of delivery that
27 exceeds a probability of delivery associated with
28 transmission of information other than context control
29 information according to the first transmission
30 parameter; and

31 said output responsive to said second
32 transmission parameter for transmitting the context
33 control information from the first packet communication
34 station to the second packet communication station
35 according to the second transmission parameter.

1 35. The method of Claim 34, wherein said second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication

5 station in a plurality of consecutively transmitted
6 packets.

1 36. The method of Claim 34, wherein the second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication
5 station in each of a plurality of packets respectively
6 transmitted periodically in accordance with a
predetermined frequency.

1 37. The method of Claim 34, wherein the second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication
5 station at a higher power level than a power level
6 specified by the first transmission parameter.

1 38. The method of Claim 34, wherein the second
2 transmission parameter specifies that the context control
3 information is to be transmitted from the first packet
4 communication station to the second packet communication

5 station using a lower channel coding rate than a channel
6 coding rate specified by the first transmission
7 parameter.

1 39. The apparatus of Claim 34, wherein said output,
2 said context control information generator, and said
3 transmission parameter generator are provided in the
4 first packet communication station.

1 40. The apparatus of Claim 39, wherein the first
2 packet communication station is a radio communication
3 station operating in a telecommunications network.

1 41. The apparatus of Claim 34, wherein the context
2 control information includes one of a context update and
3 a context update request.

1 42. An apparatus for processing header compression
2 context update requests received at a header compression
3 side of a packet communication link, comprising:
4 an input for receiving context update requests;

5 an output for sending context updates in
6 response to receipt of context update requests at said
7 input; and

8 a context update request filter coupled between
9 said input and said output for determining whether a
10 context update request is unnecessary for context
11 consistency between the header compression side of the
12 packet communication link and a header decompression side
13 of the packet communication link and for preventing said
14 output from sending a context update in response to a
15 context update request that is determined to be
16 unnecessary for context consistency.

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3 43. The apparatus of Claim 42, wherein said context
4 update request filter is operable to recognize when a
5 context update request received at said input was sent
6 from the header decompression side in response to
7 expiration of a predetermined amount of time between
8 arrival at the header decompression side of consecutive
packets of a packet flow from the header compression side
to the header decompression side.

1 44. The apparatus of Claim 43, wherein the context
2 update request filter includes a timer for determining
3 whether said predetermined amount of time has elapsed
4 between successive packet transmissions in the packet
5 flow, said context update request filter further operable
6 for deciding that a received context update request is
7 unnecessary for context consistency if said predetermined
8 amount of time has elapsed between successive packet
9 transmissions in the packet flow.
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11 45. The apparatus of Claim 42, wherein said context
12 update request filter includes a timer for determining
13 whether a round-trip-time associated with the packet
14 communication link has expired between successive packet
15 transmissions in the packet flow, said context update
16 request filter further operable for deciding that a
17 received context update request is unnecessary for
18 context consistency if the round-trip-time has expired
19 between successive packet transmissions in the packet
20 flow.

1 46. The apparatus of Claim 42, wherein said input,
2 said output, and said context update request filter are
3 provided in a packet communication station at the header
4 compression side of the packet communication link.

1 47. The apparatus of Claim 46, wherein the packet
2 communication station is a radio communication station
operable in a telecommunications network.

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